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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,291	08/18/2003	Shoichiro Yasunami	Q77024	2020
65565	7590	01/03/2008		
SUGHRUE-265550'			EXAMINER	
2100 PENNSYLVANIA AVE. NW			CHU, JOHN S Y	
WASHINGTON, DC 20037-3213				
			ART UNIT	PAPER NUMBER
			1795	
			MAIL DATE	DELIVERY MODE
			01/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/642,291

Applicant(s)

YASUNAMI ET AL.

Examiner

John S. Chu

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/24/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the amendment filed October 24, 2007.

1. The rejection under 35 U.S.C. 102(e) over KAI et al is **withdrawn** in view of the deficiencies as pointed out by applicant's attorney.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2 and 4-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of KAI et al (203/0022095) in view of KOBAYASHI et al (5,916,729), HAKEY et al (6,114,082) and SHIRAKAWA et al (6,773,862).

The claimed invention is drawn to the following:

1. (currently amended): A negative resist composition comprising:

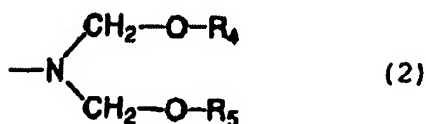
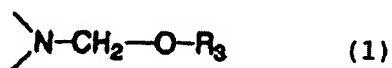
(A) an alkali-soluble resin;

(B-1) a cross-linking agent capable of cross-linking with the alkali-soluble resin (A) by the action of an acid, in which the cross-linking agent is not a resin and is a phenol compound having a molecular weight of 2,000 or below and containing: at least one phenolic hydroxyl group; one or more benzene rings in the molecule; and at least two cross-linking groups bonded to any of the benzene rings, the cross-linking group being a group selected from the group consisting of a hydroxymethyl group, an alkoxymethyl group and an acyloxymethyl group;

(B-2) a cross-linking agent capable of cross-linking with the alkali-soluble resin (A) by the action of an acid, in which the cross-linking agent contains at least two groups selected from the group consisting of the groups represented by the following formulae (1) and (2);

(C) a compound capable of generating an acid upon irradiation with an actinic ray or radiation; and

(D) a nitrogen-containing basic compound:



wherein R_3 represents a hydrogen atom, an alkyl group, or an alkylcarbonyl group; and R_4 and R_5 each represents a hydrogen atom, an alkyl group or an alkylcarbonyl group.

KAI et al is cited to disclose the use of two crosslinking agents in combination in a negative working photoresist composition, wherein the two crosslinking agents are a glycouril and a hydroxyalkyl benzene compound respectively, see Example 6 on page 14, Table 1. The reference lacks the claimed hydroxymethyl group as recite for (B-1), wherein a hydroxyisopropyl benzene is disclosed.

Each of HAKEY et al, SHIRAKAWA et al and KOBAYASHI et al disclose the use of methylol group containing phenols which can be used in combination with a glycouril or melamine containing crosslinking agent, see column 8, line 10 - column 9, line 13 in HAKEY et al , column 52, lines 15 - 19 of SHIRAKAWA et al which suggests nitrogen-containing crosslinking agent and column 9, lines 17-55 in KOBAYASHI et al wherein combinations of two or more crosslinking agents is taught.

It would have been *prima facie* obvious to one of ordinary skill in the art of negative working photoresist compositions to use any of the known crosslinking agents such as hydroxymethyl group containing phenols with alkoxy group containing glycourils or melamines in combination and reasonably expect same or similar results as disclosed in KAI et al for photoresist compositions with excellent resolution, line-and -space resist patterns, as well as excellent sensitivity, and developability as disclosed in KAI et al and more specifically to use a hydroxymethyl group containing crosslinking agent in place of hydroisopropyl benzene and reasonably expect same or similar results as disclosed in KAI et al absent any objective evidence showing unexpected results.

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John S. Chu/
Primary Examiner, Group 1700

J.Chu
January 1, 2008